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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,473	08/23/2006	Yoshiyuki Wada	MAT-8888US	9698
52473	7590	09/01/2009		
RATNERPRESTIA P.O. BOX 980 VALLEY FORGE, PA 19482			EXAMINER NGUYEN, DONGHAI D	
			ART UNIT 3729	PAPER NUMBER
			MAIL DATE 09/01/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,473	Applicant(s) WADA ET AL.	
	Examiner DONGHAI D. NGUYEN	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/20/09; 6/23/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 8, 2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,402,013 to Abe et al in view of US Patent 4,749,120 to Hatada and vice versa.

Abe et al disclose an electronic component mounting method for mounting the electronic component on a substrate by soldering a connection terminal disposed at both ends of a main body of the electronic component to a pair of electrodes provided on the substrate (see Col. 4, lines 36-38), comprising an adhesive supplying step of supplying a thermosetting adhesive mixing solder particles to the substrate (see Col. 4, lines 20-24), a component mounting step of mounting the electronic component (chip) on the substrate after the adhesive supplying step (see Col. 4, line 24), and a heating step of heating the substrate after the component mounting step

Art Unit: 3729

(see Col. 4, lines 26-27), wherein the adhesive supplying step is characterized by supplying the adhesive to the electrode (see Col. 4, lines 15-16), the component mounting step is characterized by fitting the connection terminal to the adhesive supplied on the electrode (see Col. 4, line 25), and the heating step is characterized by forming a solder junction by bonding the connection terminal and electrode by fusing the solder particles in the adhesive supplied to the electrode and also forming an adhesion reinforced part for fixing the main body to the substrate by heating and curing the adhesive by sealing the inside of the adhesive with solder part by fusing and solidifying of solder particles contained in the adhesive supplied in the adhesion reinforcing portion causing the adhesive to spread and contact a larger portion of the surface of the main body (see Col. 4, lines 32-39). Abe et al. do not disclose supplying the adhesive to an adhesion reinforcing portion determined between the pair of electrodes on the substrate and fitting the main body to the adhesive supplied in the adhesion reinforcing portion causing a portion of a surface of the main body to contact the adhesive. Hatada teaches supplying the adhesive (22) to an adhesion reinforcing portion determined between the pair of electrodes (20) on the substrate (see Fig. 1A) and fitting the main body to the adhesive supplied in the adhesion reinforcing portion causing a portion of a surface of the main body to contact the adhesive (see Fig. 1B) for improving the electrical connection and mechanical fixing of the component to the substrate (see Abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Abe et al by utilized the method of supply the adhesive between the pair of electrodes as taught by Hatada for improving the electrical connection and mechanical fixing of the component to the substrate.

Art Unit: 3729

In alternative, Hatada discloses every limitation of claims 1 and 6, except for the adhesive having a thermosetting adhesive mixing with solder particles. Abe et al teach the adhesive comprises mixture of thermosetting adhesive and solder particles (Col. 4, lines 20-23) for increasing the joining strength of electronic component to the board without require cleaning after soldering (see Col. 1, lines 58-67). Therefore, it would have been obvious to one having ordinary skill in the art the time the invention was made to modify the invention of Hatada by utilized the adhesion as taught by Abe et al for increasing the joining strength of electronic component to the board without require cleaning after soldering, underfilling or resin molding.

4. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe/Hatada or Hatada/Abe as applied above, and further in view of US Patent 6,521,997 to Huang et al.

Abe/Hatada or Hatada/Abe as applied and relied above do not disclose the adhesion reinforcing portion partly overlaps with the plural electrodes, and the portion separated from the electrodes is set on a concave resist film. Huang et al teach the adhesion (14 and 17) partly overlaps with the plural electrodes (12), and the portion separated from the electrodes is set on a concave resist film (11), and the solder part is held in the concave portion (see Figs. 3 and 4) for preventing the occurrence of short circuit between electrical component and solder electrodes (see Col. 2, lines 21-22). Therefore, it would have been obvious to one having ordinary skill in the art the time the invention was made to further modify the invention of Abe/Hatada or Hatada/Abe by utilized the configuration of electrodes, resist film and adhesive as taught by

Art Unit: 3729

Huang et al for preventing the occurrence of short circuit between electrical component and solder electrodes.

5. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe/Hatada or Hatada/Abe as applied above, and further in view of US Patent 5,726,861 to Ostrem.

Abe/Hatada or Hatada/Abe as applied and relied above do not disclose the adhesion reinforcing portion is a position for covering a reinforcing electrode provided between the pair of electrodes on the substrate. Ostrem teaches the adhesion reinforcing unit (113) covers the reinforcing electrode (111) provided in a portion separated from the pair of electrodes on the substrate (see Fig. 1) to fix the main body (117) to the substrate (101) for maximizing the fatigue life of the surface mount component soldered connection and providing a compliant interconnect that can withstand repeated thermal excursions (see Col. 4, lines 9-14). Therefore, it would have been obvious to one having ordinary skill in the art the time the invention was made to modify the invention of Abe/Hatada or Hatada/Abe by utilized the adhesion reinforcing unit as taught by Ostrem for maximizing the fatigue life of the surface mount component soldered connection and providing a compliant interconnect that can withstand repeated thermal excursions.

Response to Arguments

6. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 3729

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONGHAI D. NGUYEN whose telephone number is (571)272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris H. Banks can be reached on (571)-272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN
August 31, 2009

/Donghai D. Nguyen/
Primary Examiner, Art Unit 3729